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Chionobas Katahdin

AND AN ACCOUNT OF ITS DISCOVERY.

BY H. H. NEWCOMB.

Chionobas katahdin n. sp. Male.—Expanse 1.90 inches. Body dark brown. Antennæ dark, ringed with yellow; club lighter; upper side: wings thinly scaled, of a dusky brown color, except the outer third, which is suffused with yellowish brown. The outer edge of both wings is clearly defined by a distinct black line, outside of which there is a fringe of fine hairs of a light brownish shade, except opposite the end of each vein, where they are nearly black. The primaries have a small dark spot finely pupilled with white near the apex, though occasional specimens have three or four spots, while in rare cases there is an entire absence of maculation. The dark sexual dash usual in this genus is fairly prominent. On the underside the primaries are much the same as above except that they are somewhat paler, and at the apex and along the costa there is a thick sprinkling of dark scales. The inferiors beneath are strongly marked and have a dark irregular band extending across the middle third of the wing, bounded on each side by a black line varying in width, outside of which is a band of gray, becoming darker as it extends outward toward the edge, the whole wing being strongly mottled.

Female.—Expanse 2 inches. Markings much the same as in the male, except that the yellowish brown of the outer third of the wings is more

pronounced, and there are usually two or three spots on the upper side of the primaries, though these may vary from 1 to 4. On the inferiors beneath there is a row of five white dots parallel to the outer edge of the wing.

Hab.—Mt. Katahdin, Maine, at an elevation of 4250 to 5000 ft. above the sea-level.

Described from forty-three males and twenty females taken by the writer at the above locality in the latter part of June of this year.

Owing to the accuracy of the figures on the plate a more lengthy description seems unnecessary. In general appearance *C. katahdin* somewhat resembles *C. crambis* Freyer. On the upper side it is perhaps as near *C. polixenes* Fabricius as any other butterfly of this genus, while on the underside the wide band on the inferiors is much the same as in *C. taygete* Hubner. In the plate the two upper and the two lower figures represent the most constant forms of male and female, while the central figures represent the extreme variations.

An account of the trip which resulted in the discovery of this new species would not be out of place at the present time. The idea was first suggested by Mr. P. G. Bolster, vice-president of the Harris Club, that Mt. Katahdin might be a productive field for an Entomologist. This is a locality that seems to have been neglected in the past, probably on account of its inaccessibility. Mt. Katahdin rises out of the pine forests of northern Maine to a height of over 5000 ft. Its vast bulk is between seven and eight miles in length. I cannot do better than to quote from Mr. Churchill's* article in *Rhodora* for June. He says: "Mt. Katahdin is still surrounded by an immense wilderness, traversed only by lakes and rivers and by roads or trails, which in summer, at least, are too rough to attract the tourist; and Mr. Hamlin's observations are true to-day that 'the mountain is so inaccessible that practically it is remote even to New Englanders.'" It is over one hundred

* Mr. Jos. R. Churchill was one of a party of five botanists who ascended the mountain in July, 1900, the others being Dr. George G. Kennedy, Merritt L. Fernald, Emile F. Williams and J. Franklin Collins, all of Massachusetts.

miles north of Bangor and some thirty-six miles from the nearest railway.

Under promise of good trout fishing we induced two piscatorially inclined friends, Messrs. W. F. Lamont and J. W. Gough, to make up our little party of four, all of us near neighbors in Boston, which met at Bangor on the morning of June 24th, and took the train for Staceyville, one hundred miles to the north. Little did we reckon on the hardships in store for us; the weary miles of walking over the worst roads on earth, the struggle through the virgin forest with forty pounds of luggage apiece on our backs, and last but not least the daily conflict with black-flies, whose bites mixed with sunburn makes a combination never to be forgotten.

Leaving Staceyville at noon with our baggage piled high on a buckboard drawn by two stout horses, we plunged into the forest. The weather was cloudy with a tendency to rain, but about four o'clock the sun came out just as we reached a clearing in the woods. Here, while the horses were having a short rest, I began my first collecting, taking *A. atlantis*, *P. nycteis*, *M. harrisii* and *L. arthemis*, besides others of less account. We passed that night in a comfortable camp at a place called "Lunksoos," on the east branch of the Penobscot River. This camp, which is a substantial two-story log-house, is run by Mr. and Mrs. "Ed" Rogers; and it was here we were joined by Percy Hussey who was to be our guide for the next two weeks while we were in the wilderness. We had accomplished about eight miles the first day.

The next morning bright and early we resumed our journey. A log-jam in the river caused some delay, but finally we got across on the ferry. This latter is a flat old "scow," sunk almost to the water's edge; but in spite of its looks, it proved able to float the whole outfit, horses, buckboard and all across the river. The "tote-road" lies along the western bank of the Wissataquoik River, through an open and rather barren country caused by numerous forest fires. The collecting was fair, but as we kept pushing on as fast as possible there was not an over abundance of time to spare, We walked most of the time, the roads being too rough to permit of riding on the buckboard with any degree of comfort.

L. arthemis was extremely plentiful. It was a common occurrence to take two or three at a time, and once I counted sixteen in a space not larger than a man's hand. Besides getting a good supply of these, I took *P. oleracea* and *C. mandan*, as well as duplicates of some of those netted the first day. At dusk we reached City Camp, a collection of log houses used by lumbermen in the winter time, having scored sixteen more miles on our second day. After a hearty supper, which included a fine mess of trout caught by our fishermen, we "turned in" on the hard floor, rolled up in our blankets.

By noon the next day we made "McLeod" Camp, having placeed 5½ miles more to our credit. Now commenced the hardest part of our journey. The buckboark could proceed no further, so our food, blankets and such articles of clothing as we considered indispensable were packed on one of the horses. A hard climb of about two miles brought us to the limit of travel for even a horse, with three more miles yet to do before we should reach Camp Kennedy in the great South Basin of Mt. Katahdin. These last miles were along a trail, which we followed by the blaze-marks on the trees, over rocks and stumps and moss-covered pit-falls which lined the way. The heat was most oppressive, yet we had to stumble along as best we could, carrying our goods ourselves, urged on by the ever-increasing viciousness of the black-flies. We finally staggered into camp about seven o'clock, nearly "done up." And what a discouraging sight met our gaze! The roof had collapsed, and the rains and snows had played havoc with the interior — in fact it was so far destroyed that we could not use it at all, but were obliged to build a "lean-to" in which to sleep; and when, after about two hours' work, we lay down on our aromatic beds of fresh fir boughs, we needed no lullaby other than the murmur of a distant mountain torrent to induce that refreshing slumber that comes after a hard day's tramp in the woods.

We were now in a great basin or amphitheatre, some two miles long by one in width, at an elevation of about 3000 ft. above the sea-level, heavily wooded and surrounded on all sides but the east by the precipitious walls of Mt. Katahdin, whose granite peaks towered over 2000 ft. above us.

The next day, Thursday, we were too tired to attempt the top, so we contented ourselves with an exploring expedition to the "Chimney." This is a deep crevice between "Pomola" (as the southeastern slope is called) and the main part of the mountain. Here we found snow-fields, some of them 200 ft. in extent, and while our friends at home were in the grasp of a hot wave we were indulging in a game of snowball. Hardly any insects were seen this day except a few Coleoptera and Hymenoptera, which were promptly turned over to Bolster, whose collecting is confined to these two orders. Friday dawned with a promise of a fair day, so we decided to climb the mountain. We pushed our way through the forest for about a mile, following the bed of a mountain brook, dry at this season of the year, until we arrived at the foot of a great land slide a thousand feet in length and rising at an angle of from fifty to sixty degrees. Up this we climbed, stopping often to rest and breathe, until we reached the table-land. This is a vast area of over a hundred acres, at an elevation of about 4250 ft., rising gradually towards the North Peak on the right and the West Peak on the left, and perhaps three-fourths of a mile in width. It is covered for the most part with vegetation, though there are a great many loose rocks and boulders scattered about. Mountain hemlock, low and scrubby, grows over about two-thirds of it, while the rest is carpeted with sedge, mountain cranberry, crowberry and moss. Just before we reached the table-land the clouds had enveloped the whole top of the mountains; therefore we were able to explore but a small portion. Several times, however, the sun made ineffectual attempts to shine through the dense fog; and then it was that we beheld *Chionobas katahdin*, a small brown creature fluttering close to the ground. By dint of perseverance I managed to capture eleven of these butterflies before descending the slide. I did not realize that I had discovered a new species, but thought it might be a variety of *C. semidea*, which is found under similar conditions on Mt. Washington, 161 miles to the southwest; and it was not until I had submitted specimens to Dr. Skinner and other Entomologists, that I felt sure that I had been so fortunate.

Saturday, the 29th, proved to be the best day of all. Leaving the two fishermen to tend camp, Bolster and I, together with the tireless "Percy," made the ascent of the West Peak, the highest point of Mt. Katahdin, estimated to be 5215 ft. above the sea. At the summit were three cairns which literally swarmed with insects, blown up from below. Bolster fairly revelled in them, bottling them by the score. As I am only interested in Lepidoptera, I must leave it to him to tell the readers of the NEWS about his captures. I returned to the table-land and devoted the day to *C. katahdin*, taking in all forty-nine specimens; but I found it no easy matter to net them, as they are very wary, and as soon as they take wing the wind, which is always blowing a small-sized gale up there, carries them far away. When at rest on the ground with their wings closed, it is almost impossible to distinguish them from the moss; the coloring of the underside of the wings being so similar that the mimicry is nearly perfect. Rain in this region is a daily occurrence, and this day proved no exception, consequently we forced to return early in the afternoon.

Our provisions were getting low, so Lamont and Gough started back for City Camp on Sunday morning; and as Bolster was somewhat under the weather, I was left to go up the mountain alone. My trip was not very successful, as the wind was so strong (I could hardly stand up against it) that on my return I had but three specimens of *katahdin* as the *net* result of a day's hard work. There is no need to worry about this little colony of butterflies becoming exterminated by collectors. The trip is too difficult and expensive to tempt many Lepidopterists; and after arriving on the ground the weather conditions are too uncertain to guarantee success. There are days at a time when the clouds are so dense over the mountain that ascent is impossible, and then one cannot get a third of the butterflies he sees, they are so quick to take alarm and be carried out of reach by the breeze. I consider that I was particularly fortunate to go on the mountain at just the right time and be favored with weather that made collecting possible.

Moths were not plentiful at any stage of our journey, and space will not permit of a list with this account.

The return journey was made without especial interest. "Emerson," our driver, met us promptly with the buckboard; and what with fishing and "butterflying" the journey seemed short indeed. I added some good specimens of *D. portlandia* to my captures, besides many more common "flys."

In all we were gone fifteen days from Boston, and were glad to get back to civilization and away from the black-flies, and sleep once more in a real bed.

In conclusion I wish to thank Mr. Emile F. Williams for much valuable information, the result of his trip to Mt Katahdin in 1900, and Dr. Henry Skinner for his kindness in helping me to determine that I had a new species in *Chionobas katahdin*.

The Greenhouse Coccidae, I.

By GEO. B. KING, Lawrence, Mass.

The introduction of scale insects by the means of man, that is to say by the importation of greenhouse plants, seems to be increasing yearly, and a list of such species as have already been recorded or known to infest greenhouses I have thought should be brought together and published for the benefit of Economic Entomologists and Horticulturists. My residence in a city where there is no library treating upon or in any way assisting one in Entomological research work has compelled me to depend upon my own private library. It should therefore be clearly understood that the following list of greenhouse coccids is far from being complete; and it is to be hoped that more interest will be taken in this very important branch of Economic Entomology. Any information concerning these pests in greenhouses will be thankfully received by me, and due credit given. Prof. Cockerell some two or three years ago kindly sent me a list of greenhouse coccids recorded by Signoret to inhabit greenhouses in Europe. The number of species given was 45. We now know of 64, and of this number only one species as yet can be called a native of this country; several scales have been described from greenhouses in America, whose nativity are unknown at present. It may be that *Mytilaspis gloveri* Pack. is a native species, and we do know

that *Eriococcus azaleæ* Comst. is native beyond all doubt. No less than 26 species have been found in greenhouses in Massachusetts alone. The species already recorded by Signoret to inhabit greenhouses in Europe and which are now found in North America are designated in italics—*Signoret.*

MONOPHLEBINÆ.

1. **Icerya purchasi** Mask, 1878.

So far as I know, this coccid has been found but once, and in a greenhouse at Cambridge, Mass.; found there by Dr. Hagen. This is a very common species living out of doors in California.

PORPHYROPHORINÆ.

2. **Conchaspis angræci** Ckll.

C. rodrigueziæ Newst. is the same. Described as a *Pseudinglisia.* Found in greenhouses in England (Newstead).

COCCINÆ.

3. **Eriococcus coccineus** Ckll.

Originally described fron a greenhouse in Nebraska, on a rat-tail cactus (Cockerell).

4. **Eriococcus azaleæ** Comst., 1881.

Originally described from one of the U. S. department greenhouses at Washington, D. C. on *Azalea* (Comstock), and since then, found on *Azalea* in the College greenhouse at Michigan (G. C. Davis), and have been found living out of doors on *Azalea nudiflora* at Ithica, N. Y. (Comstock), and on white thorn (*Cratægus coccinea*) in deep woods at Methuen, Mass. (King).

5. **Dactylopius citri** Risso., 1813.

First described from greenhouses in Europe, is now found on *Croton* fern, *Arabian* and *Liberian coffee*-plants in the U. S. department greenhouses at Washington, D. C. (Comstock), on *Habrothomnus* and *Solanum jasinoides* in the College greenhouse at Colorado (Baker), on orange, coffee, tobacco, *Croton*, *Ipomea*, *Learii*, *Habrothomnus*, *Pæonia* and *Solanum jasmoides* at Florida (Gossard), on greenhouse plants at Santa Fe, N. M. (Cockerell), on *Coleus*, *Cactus*, *Geranium* and ivy at Lawrence,

Mass. (King), and on *Callistemon lanceolatus* at Cambridge, Mass. (King).

6. **Dactylopius longispinus** Targ.

On ferns and several other plants in the U. S. department greenhouses at Washington, D. C. (Comstock), on ferns and other plants in New Mexico (Cockerell); also in greenhouses in Ohio, on *Cycas revoluta* in the Springfield Natural History Museum, Mass. (Dimmock), on palms, *Coleus* and fern at Lawrence, Mass. (King), in greenhouses in Europe. *Signoret.*

7. **Dactylopius pseudonipæ** Ckll., 1897.

Described from specimens found on leaves of palms in a California greenhouse. Previously found in a Michigan greenhouse and published as *D. nipæ* Mark. (Ckll. and Perg.); also on palms at Lawrence, Mass. (King).

8. **Dactylopius nipæ** Mask.

Found in the tropical greenhouse of the Harvard Botanical gardens, Cambridge, Mass., food plant unknown (King). This is a very common species living out of doors in Europe.

9. **Dactylopius vitis** Newst.

This is very destructive to greenhouse plants in England. Cited sometimes as *Coccus vitis.*

(To be continued.)

Letters from Thomas Say to John F. Melsheimer, 1816–1825.—VI, VII.

Washington, Dec^{r} 12th 1817.

My dear Sir.

Since I had the pleasure to see you I continued my walk to Baltimore & thence by the steamboat conveyance to Philad^{a}, without the occurence of any incident worthy of note—After myarrival in Philad^{a} M^{r} M^{c} Clure,[1] (of whom I spoke to you, when I was at your home) invited me to accompany him on a journey to Florida, this invitation you may be sure I thankfully accepted, so that here we are thus far upon our journey to that promised land, not flowing with milk & honey it is true, but abounding in insects &c which are unknown, & if

[1] See proper spelling in next letter.

they remain unknown I am determined it shall not be my fault ; I received from Mr Oemler of Savannah a box of insects for you, & also one for myself which contained Diptera & Hemiptera—he requested me to open your box to observe their condition & to note such of them as I would wish him to send to me—In your box was a few of the larva of the Anthrenus, but little injury however appears to have been done ; in my box was at least twenty of these intruders & many insects were completely destroyed—I brought your box upon my lap with care to your friend in Baltimore together with Mr Oemler's letter to you, also the four first & seventh numbers of our Journal,[2] and the first number of my American Entomology all which I hope may reach you in safety & meet your approbation—Any letters &c you may send for me will be perfectly safe in Philadelphia untill my return

With the most sincere
respect & esteem
I remain your Obdt Servt
Thomas Say—

Philada June 10th 1818

Dear Sir—

After a considerable interval occasioned by absence from this country, I once more have the pleasure to address my friend—In my last letter I informed you that I was about setting off upon a journey into Florida in pursuit of objects of Natural History. This has been accomplished—I accompanied the president of our Academy Mr Wm Maclure (a gentleman well known in Europe & America for Science & beneficence) in his Carriage by easy journies as far as Charleston ; we then took the Steam boat to Savannah, & sent on the carriage by land. At Savannah we met our companions Messrs Ord & Peale who had arrived a day or two before us from Philada by sea. Here the Carriage & Horses were sold & we Chartered a sloop of about thirty tons burden & after laying in our stores & necessarys we commenced our voyage toward the promised land—we stopped at each of the Sea Islands in order to examine their productions and the sea Coast for crustacea, Molusca &c—took in another

[2] Journal of the Academy of Natural Sciences of Philadelphia.

supply of provisions &c at St. Marys and then continued our voyage to the St. Juan—This noble river we ascended as far as Picolata, an old Spanish fortress, now in ruins, about 100 miles from its mouth, stopping occasionally at such places as presented an inviting aspect & making short excursions into the country on each side of the river—From Picolata we crossed the country on foot to St. Augustine in order to present our passports to the Governor of the Province and to obtain from him such information as might direct our further progress with the greatest probability of success—From him we learned that on account of the hostility of the Indians, it would be the extreme of imprudence to venture any further up the river,, but that in the present state of things we would be more safe in exploring the more southern rivers & coast, such as Mosquitto river &c —We therefore returned disappointed to our little vessel & retraced our voyage to the mouth of the river with the intention of going to Mosquitto river & perhaps as far as to Cape Florida, but hearing that the Indians were troublesome in the south so that we would be in great jeopardy there, we determined once more to ascend the St. Juan as high as we had been before, & again seek upon the adjacent country for all those subjects of Nat. Hist. of which the acquisition was the sole object of our undertaking.

As we redescended the river we heard of parties of Indians who had been committing depredations, & one person informed us that a few days previous, his plantation was totally destroyed by them & his son killed, he narrowly escaped with the remainder of his family, & with the graze of a rifle ball on his forehead the Indians then took the road to Picolata ; so that we departed from that place in good time, as it seems probable they went in quest of us—

After remaining a few days at the mouth of the river to make further collections we began our return voyage, we examined more in detail all the Georgia Sea Islands, revisited Fernandina in Amelia Isl^{d} ; St. Marys, Savannah, Darien &c —At Charleston we abandoned our Sloop & embarked on board a packet Ship for this city, to which we have all returned in good health & without any casualty. Thus, in consequence of this most cruel & inhuman war that our government is un-

righteously & unconstitutionally waging against these poor wretches whom we call savages, our voyage of discovery was rendered abortive as we were not in Florida at the season we wished, the Spring, we therefore obtained but very few Insects & these few of but little consequence—My discoveries were principally in the Crustacea—

The other day I sent you the May number of our Journal—that of December you may expect to receive about the same time with this letter—Another number will be out in a few days which I will then send to you—please let me know if you have all the numbers complete & all the plates, if your series should not be perfect I will make it up—

I have put up for you a few Insets, two or three species of East India Fishes, & some Crustacea, but I much fear that they will not be new to you—

In Vol. I. New Series of the American Philosophical Transactions I have published "A Monograph of North American Insects of the Genus Cincindela" with a plate, this paper was given to that society on condition of their giving me a few separate copies of it; not a single separate copy however has been given me, this I am more especially sorry for, as I wished to have sent one to you, for your remarks upon it—

I remain respectfully
Your Obt Servt
Thomas Say

A Successful Failure.

By Annie Trumbull Slosson.

(Continued from page 203.)

On this attractive shrub I took, also, a few specimens of a pretty little *Scymnus*, a variety of S. *bigemneus* Horn. This form was figured by Dr. Horn, having been taken by Hubbard and Schwarz in Florida some yeary ago.

But not all my discoveries were associated with the *Trema*. One day in January, when windy, wet weather kept me indoors, I saw upon my window an odd little beetle and bottled it. On examination it proved to be a Rhynchophorid, quite unlike anything I had ever seen, nor could I find any

description suiting it in LeConte and Horn's synopsis which I had with me. It puzzled Mr. Liebeck, to whom I sent it, and I consulted Mr. Schwarz, who was able to give me the desired information. He pronounced the beetle a member of a family new to the fauna of North America, the Allocorynidæ. It belongs to the genus *Allocorynus* Sharp, of which there has been but one species described hitherto, from which this one is quite distinct. Mr. Schwarz has given it the MS. name of *A. slossonæ*, and will soon describe it. I took a second specimen, later, while sweeping low herbage along the shore of the Miami River.

I am fond of window-pane collecting. My windows at Miami are the only ones in the hotel without wire screens. Those I always have removed as soon as I arrive; they would interfere with my collecting. Many a choice specimen I have taken on the glass of those windows. One morning in March of this year I saw a small Hymenopterous insect upon one of the panes of an eastern window. While capturing it another appeared, and then another. Throughout the forenoon they came at intervals until I had several of both sexes, all the same species. They were evidently parasitica, and, as my windows were all closed, I felt sure they had emerged from something in the room. But what was it? There was not to my knowledge a chrysalis, pupa, or larva in that apartment, all such treasures being kept in an adjoining room. Suddenly I remembered an egg-case of a *Mantis* which a friend had brought in to ask about and left upon my table. I examined it and found that my tiny visitors had evidently come from this. I sent some of them with other insects to Mr. Ashmead, who identified them as *Anastatus mirabilis* Walsh, "parasitic on Katydid's eggs." In a small lot of parasitica, gathered by me in Miami, this last season, Mr. Ashmead found twelve new species, and others were marked by him "very rare," "West Indian," "described from Mexico." My Diptera, too, turned out well, several of my captures being new species and others exceedingly rare. Lepidoptera were very scarce. I took little of interest or especial value in that order. I was surprised by once finding at twilight hovering over blossoms a fine fresh

specimen of our northern Sphinx, *Ampelophaga versicolor*. I had no idea that its distribution was so extended. One afternoon in early March I found, under a board, a colony of ants. With them were many specimens of a dark Scarabæid beetle. As soon as I began trying to secure specimens of this the ants covered my hands, biting sharply, while others surrounded the beetles and hustled them, so to speak, into the burrows. In spite of this I managed to take several specimens of the beetles and of their hosts. But my hands smarted and tingled for some minutes after the struggle. The beetles proved to be *Euparia castaneæ*, well know as one of our myrmecophilus species.

A few days after this I visited the place again, meaning to secure more specimens, but the station was destroyed. Some one had removed a portion of the boards formerly lying there and dumped a load of rubbish in their place, and my ants and their visitors were gone, or at least hidden from my searching eyes.

A few days before I left Miami, on a cold, raw day with high winds, while standing at a closed east window which looks out upon the bay, I saw a minute dark speck on the white sill outside. Opening the window I moistened my finger, took up the little dot and dropped it into a cyanide bottle. Occupied with other things, I forgot the capture until, some time after, I saw a similar speck upon same sill. I took that and afterwards another and another, until I had, I think, eight or nine. On examination I found them to be beetles, most dainty, graceful little creatures, evidently Latridiids, but quite unknown to me. They were identified by Mr. Liebeck as *Belonia unicostata* Belon. The genus was erected by Mr. Fall for this species and named for the distinguished French entomologist who found the types in Mexico. Hubbard and Schwarz took two specimens in Florida. There is on all my specimens a conspicuous chalky deposit which makes the head and thorax pure white. This is not referred to by Belon or Fall, and was evidently not present in the specimens before them. In speaking of the genus *Metophthalmus*, Mr. Fall makes mention of a similar white deposit on its species.

One day while creeping in and out among the mangroves on the bay shore I came upon an odd looking shrub with many dried brown roundish seed pods upon it. Breaking off one of these I cut it open and was surprised to see crawl out a fine reddish brown weevil. In an instant I recalled what Dr. Hamilton recorded years ago concerning *Cryptorhynchrus lutosus*, its breeding abundantly in the pods of an abnormal leguminous shrub, *Ecastaphyllum brownei*. I was as much interested from a botanist's point of view as from an entomologist's. For years I had searched vainly for *Ecastaphyllum*. For years, too, I had seen shrubs like this one, but not in flower or fruit, and never suspected its identity, never even guessed that it belonged to the Leguminosæ. For it is indeed abnormal, its "leaves reduced to a single leaflet," the pod "orbicular, compressed, one-seeded," as Chapman's Manual says. For, of course, I looked my new shrub up as soon as I returned to the hotel, and I found that I was right in my diagnosis, botanical as well as entomological. I brought home some of the pods and nearly everyone contained the beetle, not at all a common one in collections.

Contributions to the Odonata of Maine.—IV.

By (the late) F. L. HARVEY, Orono, Me.

(Continued from page 198.)

69. **Ophiogomphus carolus** Needham.

Several males taken at Orono, June 18th, and Sunk Haze stream, June 28, 1898.

Our specimens do not have the inferior appendages so obliquely truncate as shown by Needham (pl. 5, fig. 26, Can. Ent., Sept., 1899, p. 237), the inner tips in our specimens being more obtuse.

Remarks: Since writing the above Prof. Needham has published an article on *Ophiogomphus*, which shows clearly that what has passed for *O. mainensis* is his *carolus*, and that the true *O. mainensis* is known only by the type ♀, which is a very different insect from the ♀ of *O. carolus*, and, as we suggest under *O. anomalus*, may be that species.

61. **Ophiogomphus anomalus** Harvey.

A second male was taken along the border of woods June 8, 1898, and on June 7 and 8, 1899, 75 pairs were captured permitting a more careful study of the male and a description of the previously unknown female.

The males vary in length from 39 mm. to 44 mm. The width of the abdomen at the base of the 8th segment is fully 5 mm. in life instead of 2.5 as given in the original description. The spots on the dorsum of 9 and 10 are somewhat variable; the most agree with the original description, but the spots on both 9 and 10 are sometimes obovate and the one on 9 sometimes oblong. The superior appendages are armed with numerous stout hairs. The hind wing is prominent at the anal angle as in the male of *O. carolus*.

♀ (previously unknown).—Slightly shorter than the male, 39–41 mm., but the hind wing slightly longer, 25–26 mm. Color, head and thoracic markings and legs very nearly as in the male. Occiput armed with two prominent spines which are close together, with the tips in contact. The abdomen widening from the 7th to the 9th segments, 10th narrower. Mid-dorsal and lateral stripes as in the male, differing particularly in the form of the spots on 9 and 10, which are more frequently semicircular, curved side cephalad. The spot on 9 is sometimes square as in the male and sometimes circular. The spot on 10 is sometimes nearly obsolete. The marking on the side of 9 is not **C**-shaped as in the male.

In both sexes there is a pit in the side of segments 8 and 9; the **C**-shaped spot on the 9th segment of the male includes this pit; the head and thorax are very hairy; the wings yellowish toward the base and the whole wings give coppery reflections.

[A comparison of five females, from Orono, June 7 and 9, 1899, sent me by Prof. Harvey, with the figures of vulvar laminæ by Prof. Needham (Can. Ent. xxxi, p. 237) shows that *anomalus* is most like that of *carolinus* Needham, fig. 35; the differences are that the cleft and the interval separating the two lobes are respectively somewhat deeper and wider than in fig. 35.]

This species will have to be added to those spoken of by Prof. Needham as abundant, my son, Bartle Harvey, and myself having taken with nets, in two days, about seventy-five pairs. On the afternoon of June 7th I collected upon a hill in a pasture, covered in part with clumps of small birches, evergreens and low bushes. In one part the ground is springy, overgrown with low bushes and grass. There is no running

water and in the summer the ground is often entirely dry. The wind was blowing from the north and the specimens were on the south borders of the clumps of trees and bushes in the sun. We took in two hours twenty-five pairs, besides numerous specimens of *Gomphus abbreviatus* and *brevis*. The specimens were in many cases *teneral* and hardly able to get out of the way. They must have emerged recently, yet there were no ponds or streams nearer than a quarter of a mile. We could not escape the conclusion that they must have emerged near by. We thought that they might possibly have emerged from the springy swamp, and made a search for exuviæ but found none.

The next day we found them abundant at the same locality, and on the south side of another wood, over a mile away, near low swampy ground, where we took the type several years before. On this day, June 8th, we saw them by hundreds high up on the branches of hemlocks basking in the sun, some of them in copula. When a stick was thrown into the trees they rose in clouds. June 9th we went to the same locality and not a single specimen could be found. We searched the small ponds and small streams and the Penobscot River for several days in hopes of finding where they oviposit, but did not take or see a single specimen. We have never seen *Gomphus abbreviatus* along streams or ponds, but *G. brevis* has been taken sparingly over swift water at Chemo stream. We are troubled to know whence these species come and whither they go. We would suggest that those who wish to take rare *Gomphi* and *Ophiogomphi*, search at the right season, away from the streams and ponds, on high ground, on the south side of woods in open pastures. We believe it is quite common for species to go away from the breeding places in the teneral stage. We found on this same hill teneral *Ophiogomphus rupinsulensis* and the rare *Neurocordulia yamaskanensis* in the teneral stage for two seasons on the same date, also the teneral form of *Macromia illinoisensis* and *Neurocordulia uhleri*.

[The question of the specific identity of *anomalus* Harvey and *mainensis* Packard, having been raised, Prof. Harvey sent specimens of the former to Cambridge to be compared with the

female type of *mainensis* in the Museum of Comparative Zoology. He received this reply under date of—

"Nov. 24, 1899. Dear Mr. Harvey:—As Ophiogomphids go I should consider *anomalus* distinct from *mainensis*. The occipital spines differ slightly, but the series is insufficient to decide the value of these differences. The abdominal markings and the appendages are, however, quite distinct. *Mainensis* is a more robust species than *anomalus*, and excepting the lateral spot is without markings on the last three abdominal segments. The appendages are fulvous in *mainensis*. Yours truly,

"SAMUEL HENSHAW."

Prof. Needham has also pointed out the great resemblance between *carolus* Needh. and *mainensis*. Without attempting to make any positive statements with regard to these three species, they appear to be distinguishable, as far as present information goes, by the following features:

Anomalus. Total length ♂ 39–44, ♀ 39–41. Inferior appendage of ♂ greatly upcurved in apical half. ♀ occiput with the spines contiguous, 8–10 abd. segs. with dorsal yellow spots.

Mainensis. Total length ♀ 46 mm. (♂ unknown). ♀ occiput with the spines contiguous, 8–10 with no dorsal yellow spots.

Carolus. Total length 40–42 mm. Inferior appendage ♂ not upcurved in apical half. ♀ occiput with spines not contiguous, 8–10 with dorsal yellow spots.

The shapes of the vulvar laminæ also differ, according to Prof. Needham's figures (Can. Ent. xxxi, p. 237).

It remains to be seen whether these differences are constant. —P. P. CALVERT.]

70. **Ophiogomphus aspersus** Morse.

We were fortunate in taking seven specimens of this rare species (six males and one female) on Russell stream near N. E. Carry, Me., August 25–27, 1899. So far as we know, the types are the only specimens that have been taken. The capture is important also, as establishing a definite locality, as the exact locality of the types was not known. (See Psyche, March, 1895, p. 210.) The species was flying over swift water

with *G. scudderi* and lighting on sand bars and low bushes. It was scarce. We did not see it ovipositing.

The appendages and hamules of our specimens agree with Needham's figures of this species, but the specimens differ from Morse's description as follows: The thorax is bright grass green in both sexes, but the female faded in drying more than the males, which held their color well.

The abdomen of the males varied from 31 to 33 mm. In all of our specimens the antehumeral stripe is joined to the humeral stripe above, but separated below by a green stripe of equal width. The spot on the dorsum of 10th abdominal segment not lanceolate but oblong.

(To be continued.)

CORRCTION to ENT. NEWS, 1901, p. 207, line 17: Erase "*platura* Meigen =", and insert a (after "zett."

ORGANIZATION OF CALIFORNIA ENTOMOLOGICAL CLUB.—On August 7, 1901, Mr. Charles Fuchs issued a call to the entomologists of California for the organization of an Entomological Club.

Pursuant to call a meeting convened in the Academy of Natural Sciences of San Francisco, at 2 o'clock on August 15th.

Prof. H. Fall, acting as temporary President, opened the meeting. The following officers were elected for the current year:

President, Charles Fuchs; Vice-President, Prof. Vernon L. Kellogg; Secretary and Treasurer, Dr. F. E. Blaisdell.

President Fuchs then took the chair and proceeded to the further organization of the Society. Interesting remarks were made by Prof. Wm. H. Ashmead.

It was decided that the Club hold quarterly meetings, and that the summer meeting be termed the annual meeting, and be subject to the change of time and place. That the November meeting be held at the residence of Mr. Charles Fuchs.

It was alo decided that the May meeting be a field day.

Social discourse then followed.

The following is a list of the charter members:

Charles Fuchs, Dr. E. C. Van Dyke, Prof. H. C. Fall, E. L. Ricksecker, Dr. H. H. Behr, W. G. W. Harford, Beverly Letcher, F. W. Nunenmacher, C. W. Herr, Prof. William H. Ashmead, Edw. Ehrhorn, James W. Cottle, Dr. F. E. Blaisdell, J. G. Grundel, C. A. Whiting, Newton B. Pierce, Dr. A. Fenyes, George Harvey, F. E. Clark, Prof. J. J. Rivers, L. O. Howard, Grattum Naturalist Club. Adjournment.

F. E. BLAISDELL, *Secretary*.
1906 Sutter St., San Francisco.

Butterflies from Yellowstone National Park.

By H. K. BURRISON.

The following were taken between June 16th and August 5th, in Yellowstone National Park and vicinity:

Danais archippus
Euptoieta claudia
Argynnis leto
cipris*
oweni*
cornelia*
electa*
hippolyta*
bremnerii
zerene*
rhodope
chitone*
coronis
snyderi*
meadii
edwardsii
laura
artonis
eurynome
montivaga
égleis
myrina
helena
kreimhild
Melitiæa chalcedon
whitneyi
Phyciodes tharos
pratensis
mylitta*
Grapta zephyrus*
satyrus*
Vanessa antiopa*
milberti*
Pyrameis cardui
Limenitis weidemeyeri*
Cœnonympha pamphiloides
Erebia epipsodea*
haydeni
sofia*
Hipparchia-ridingsii
Satyrus boopis*
nephele*
charon
Chionobas chryxus*
Thecla sæpium*
calanus*
dumetorum*
dumetorum(?)*
Chrysophanus
editha
mariposa
helloides
var. florus
rubidus
Lycæna heteronea
fulla
sæpiolus
icaroides
pheres
sagittigera
podarce
rustica
shasta*
melissa
scudderi
acmon
Pieris occidentalis
beckerü*
Anthocharis ausonides*
Colias meadii*
eurytheme
eriphyle
christina
skinnerii*
Parnassius smintheus
hermodur
Papilio brucei*
Thymelicus garita
Caterocephalus mandan*
Pamphila colorado
uncas
peckius
siris
cernes
Pyrgus tessellata
ericetorum
Eudamus pylades*

Species starred were taken in very small numbers. The Papilios and Theclas were very scarce.

The collecting was done between "sight-seeing" and camp duties. As we travelled by team some 400 miles, there was but little time to devote to collecting.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., OCTOBER, 1901.

COLLECTING TRIPS.

The enthusiastic Entomologist is always thinking of new fields to conquer and is constantly longing to explore new places and capture specimens and species not taken in his own locality. He has in his mind's eye new and rare species in numbers and perhaps confidently hopes to get them. If he has but a limited amount of time at his disposal for such a journey there are a number of things that may spoil his fond dream, the principal one of these being the weather. It sometimes happens that every collecting day in the field may be a rainy one and Old Sol simply will not shine for his benefit. Or the contrary may happen, and a prolonged drouth makes him equally unhappy. Then, again, from a combination of causes it may be a bad season for insects and his catch may be numerically small and poor as to the value of the species taken. Indeed fortunate is the individual who has time to put in a whole season in a choice locality, as time is almost sure to return a reward more or less rich. There are, however, other rewards, such as the pleasure of the outing and renewed health and vigor which usually come to all who indulge in the pastimes of forest, field and stream. The hope of ideal conditions keep him at it and sooner or later the large returns comes.

Entomological Literature.

COMPILED BY P. P. CALVERT.*

Under the above head it is intended to mention papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the anatomy, physiology and embryology of insects, however, relating to American or exotic species, will be recorded. The numbers in HEAVY-FACED TYPE refer to the journals, as numbered in the following list, in which the papers are published; * denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in brackets.

3. The American Naturalist, Boston, '01.—**4.** The Canadian Entomologist, London, Ont., '01.—**5.** Psyche, Cambridge, Mass., '01.—**7.** Yearbook, U. S. Dep't. of Agriculture, 1900, Washington, Rec'd. Aug., '01.—**11.** Annals and Magazine of Natural History, London, '01.—**22.** Zoologischer Anzeiger, Leipsic, '01.—**32.** Bulletins, Museum d'Histoire Naturelle, Paris; rec'd. Aug. and Sept., '01.—**35.** Annales, Société Entomologique de Belgique, xlv, Brussels, '01; No. 6, July 3, No. 8, Aug., 30.—**36.** Transactions, Entomological Society of London, 1901, pt. ii, July 10.—**40.** Societas Entomologica, Zurich-Hottingen, Aug. 15, '01.—**44.** Verhandlungen, Zoologisch-botanischen Gesellschaft in Wien, li, 5, July 17, '01.—**45.** Deutsche Entomologische Zeitschrift, 1901, 1, Berlin, July.—**46.** Tijdschrift voor Entomologie, xliv, 1. The Hague, July 29, '01.—**49.** Termeszetrajzi Füzetek, xxiv, 1, Budapest, July 10, '01.—**55.** Le Naturaliste, Paris, Aug. 1, '01.—**56.** Mittheilungen, schweizerischen entomologischen Gesellschaft, x, 8, Schaffhausen, June, '01.—**58.** Revista Chilena de Historia Natural, Valparaiso, May-June, '01.—**79.** La Nature, Paris, '01.—**89a.** Zoologische Jahrbücher, Abtheilung für Anatomie, xiv, 4, Jena, July 22, '01; **89s,** id. Abtheil. f. Systematik, xiv, 6, Aug. 6, '01.—**102.** Proceedings, Entomological Society of Washington, iv, 4, July 16, '01.—**108.** Agricultural Journal, Dep't. of Agric. Cape of Good Hope, Cape Town, June 6, '01.—**140.** Proceedings, Washington [D. C.], Academy of Sciences, iii, '01.

THE GENERAL SUBJECT.—Bethune, C. J. S. Miss Eleanor A. Ormerod, portrait, **4,** Sept.—**Hubbard, H. G.** Letters from the Southwest: Insect fauna in the burrows of desert rodents, The Colorado desert, Salton Lake in the Colorado desert and its insect fauna; Insect fauna of *Dasylirion Wheeleri;* Insect life in Florida caves, **102.**—**Lovell, J. H.** The colors of northern apetalous flowers, **3,** March.—**Mory, E.** On some new Swiss bastards of the Sphingid genus *Deilephila* and the discovery of derived hybrids in nature, **56.**—**Pocock, R.**

* The Compiler takes pleasure in acknowledging the kindness of Mr. Wm. J. Fox, who took charge of the recording of titles during the former's absence from Philadelphia for a part of the summer.

I., Kirby, W. F., and **Waterhouse, C. O.** Report on a collection made by Messrs. F. V. McConnell and J. J. Quelch, at Mount Roraima in British Guiana, Transactions Linnean Society of London (Zool.), viii, pt. 2, Sept., 1900, rec'd. Aug. 10, '01.—**Schwarz, E. A.** On the insect fauna of the mistletoe, **102.**—**Schwarz, E. A. et al.** H. G. Hubbard [obituary], **102.**—**Wagner, W. A.** On color and mimicry among animals, Travaux de la Société Imperiale des Naturalistes de St. Petersbourg, xxxi, 2, '01.

ECONOMIC ENTOMOLOGY.—Beattie, W. R. The use of hydrocyanic gas for the extermination of household insects, Science, New York, Aug. 23, '01.—**Capitan.** Solar spots and invasions of grasshoppers, **79,** June 29.—**Clement, A. L.** The new hall of applied entomology [Paris Museum], figs., **79,** June 29.—**Fermi, C.** and **Procaccini, R.** Prophylactic researches against malaria on the north coast of Sardinia, Centralblatt für Bakteriologie, Jena, June 13, '01.—**Froggatt, W. W.** Locust fungus in Australia, **108.**—**Giard, A.** Periodicity of the invasions of locusts (*Caloptenus italicus L.*) and preventive measures against these Orthoptera, Comptes Rendus, Société de Biologie, Paris, June 28, '01.—**Gossard, H. A.** The cottony cushion scale, figs., Bulletin 56, Florida Agric. Exp. Station, Deland, Fla., May, '01.—**Howard, L. O.** Smyrna fig culture in the United States, figs., 8 pls., **7.**—**Launoy, L.** Renal alterations following acute intoxication by scorpion venom, **32,** 1901, No. 1.—**L[ounsbury], C. P.** Destroying locusts, soap with cyanide and dips with gas liquor, **108.**—**Marlatt, C. L.** The scale insects and mite enemies of citrus trees, figs., 6 pls., **7.**—**Roberts, I. P., Slingerland, M. V.,** and **Stone, J. L.** The Hessian fly: its ravages in New York in 1901. Bulletin 194, Cornell University Agr. Exp. Station, Ithaca, Aug., '01.—**Schwarz, E. A.** A season's experience with figs and fig-insects in California, **102.**—**Stevenson, C.** An antidote to insect-bites [naphthaline], **4,** Sept.—**Vayssière, A.** Study of the insects which attack sticks and juice of licorice, Annales, Faculté des Sciences de Marseilles, xi, 3, no date, rec'd. Aug. 14, '01.

ARACHNIDA.—Banks, N. Synopses of North American Invertebrates, xvi, The Phalangida, **3,** Aug.—**Barrett, O. W.** The effects of scorpion venom, **4,** Aug.—**Coupin, H.** An omnivorous Acarine, figs., **79,** Aug. 24.—**Kew, H .W.** Lincolnshire Pseudoscorpions, with an account of the association of such animals with other Arthropods, figs., The Naturalist, London, July, '01.—**Launoy, L.** See Economic Entomology.—**Peckham, G. W.** and **E. G.** *Pellenes*, and some other genera of the family Attidæ. Bulletin Wisconsin Natural History Society, i, 4, Milwaukee, '01.—**Rainbow, W. J.** Notes on the architecture, nesting-habits and life-histories of Australian Araneidæ, based on specimens in the Australian Museum, figs. Records, Australian Museum, iv, 3, Sydney, July 29, '01.—**Wolcott, R. H.** Description of a new genus of N. Amer. water mites, with observations on the classification of the

group, Transactions, American Microscopical Society, xxii, Lincoln, Nebraska, May, '01, rec'd. July 18.

MYRIOPODA.—Behal and **Phisalix.** Quinone, the active principle of the poison of *Julus terrestris*, **32,** 1900, No. 7.—**Blackman, M. W.** Spermatogenesis of the Myriapods: Notes on the spermatocytes and spermatids of *Scolopendra*, i, 3 pls. Bulletin, University of Kansas, ii, 6, Lawrence, Kans., Aug. 10, '01.—**Brolemann, H. W.** Myriopoda of America, Memoires, Société Zoologique de France, xiii, Paris, 1900. Rec'd. July, '01.—**Cook, O. F.** *Duoporus*, a new Diplopod from Mexico,* **102.**—**Heymons, R.** The history of the development of the Scolopendridæ, i, Zoologia, xiii, 2–3, Stuttgart, '01.—**Phisalix, C.** A volatile poison: cutaneous secretion of *Julus terrestris*, **32,** 1900, No. 7.

COLLEMBOLA.—Absolon, K. Further news on European cave Collembola and on the genus *Aphorura*, A. D. MacG., **22,** July 8.—**Carl, J.** Second contribution to the knowledge of the Collembola fauna of Switzerland, Revue Suisse de Zoologie, ix, 2, Geneva, Aug. 12, '01.—**Willem, V.** The influence of light on the pigmentation of *Isotoma tenebricola*, 1 pl., **35,** 6.

ORTHOPTERA.—Morse, A. P. A new *Xiphidium* from Florida, **4,** Aug.—**Turley, L. W.** *Cyphoderris monstrosa*, **4,** Sept.

NEUROPTERA.—Currie, R. P. A dwarf ant-lion fly,* **102**; Papers from the Harriman Alaska Expedition, xxii: Entomological results (14), Odonata, **140,** pp. 217-223, July 13.—**Enderlein, G.** New German and exotic Psocidae with remarks on classification, 1 pl., **89s.**—**Martynow, A.** On some peculiar glands in the larvæ of Trichoptera, **22,** Aug. 5.—**Weith, R.,** and **Needham, J. G.** The life history of *Nannothemis bella* Uhler, figs., **4,** Sept.

HEMIPTERA.—Breddin, G. New neotropical bugs, **40.**—**Cockerell, T. D. A.** The New Mexico Coccidæ of the genus *Ripersia*, **11,** July.—**Cockerell, W. P.** and **T. D. A.** A new gooseberry plant-louse,* **4,** Aug.—**Heidemann, O.** Note on *Aradus* (*Quilnus*) *niger* Stal.; Remarks on the spittle insect *Clastoptera xanthocephala* Germ., 1 pl., **102**; Papers from the Hopkins-Stanford Galapagos Expedition, 1898–1899, i, Entomological Results (1). Hemiptera, **140,** pp. 363–370, Aug. 23.—**Hempel, A.** Descriptions of Brazilian Coccidæ, **11,** July, Aug.—**Marlatt, C. L.** Remarks on some recent work on Coccidæ, **102.**—**Montgomery, T. H., Jr.** A study of the chromosomes of the germ cells of Metazoa, 5 pls., Transactions, American Philosophical Society (n. s.), xx, pt., ii, Philadelphia, '01.—**Reed, E. C.** Synopsis of the Hemiptera of Chile [in Spanish], **58.**—**Uhler, P. R.** Some new genera and species of North American Hemiptera,* **102.**

COLEOPTERA.—Arrow, G. J. The Rutelid genus *Adorodocia* and a new allied form, **11,** July.—**Bordas, L.** Morphology of the digestive apparatus of the Dytiscidæ, Comptes Rendus, Academie des Sciences, Paris, June 24, '01.—**Csiki, E.** Catalogue of the Endomychidæ, **49,** appendix.—**Felsche, C.** Descriptions of coprophagous Scara-

bæidæ,* **45.—Fleutiaux, E.** New Elateridæ and Eucnemidæ of Chile (translated into Spanish by G. B. Calvert), **58.—Harris, E. D.** A new variety of *Cicindela vulgaris*,* **4,** Aug.—**Horn, W.** Revision of the Cicindelidæ, tribe ii, **45,** Beilage.—**Jacoby, M.** Descriptions of some new species of phytophagous Coleoptera of the family Chlamydæ, Proceedings, Zoological Society of London, '01, i, I, June 1.—**Kempers, K. J. W.** The vein-system of beetles' wings [in Dutch], 3 pls., **46.—Kerr, W. C.** Swarming of *Allorhina nitida*, Proceedings, Natural Science Association of Staten Island, viii, No. 7, New Brighton, S. I., June 8, '01.—**Launoy, L.** Modification of the respiratory exchanges in the larvæ of *Cetonia aurata*, following the sting of a Hymenopter, **32,** 1900, No. 7.—**Manger, K.** On the development of *Tenebrio molitor*, L., **40.—Peringuey, L.** Descriptive catalogue of the Coleoptera of South Africa (Lucanidæ and Scarabæidæ). Transactions, South African Philosophical Society, xii, Cape Town, '01.—**Pic, M.** Second supplement to my list of Anthicidæ (1897-1900), **35.** 8.—**Planet, L.** Monographic essay on the Coleoptera of the genera *Pseudolucanus* and *Lucanus*, **55.—Schaeffer, C.** Synopsis of the species of *Trechus*, with the description of a new species,* 1 pl., Bulletin, American Museum of Natural History, xiv, No. 14, New York, July 3, '01.—**Schröder, L.** Developmental history and anatomical studies on the male genitalia of some Scolytidæ, **22,** Aug. 5.—**Wasmann, E.** On some genera of Staphylinidæ described by Thos. L. Casey, **4,** Sept.—**Waterhouse, C. O.** See the General Subject.

DIPTERA.—Coquillett, D. W. Three new species of Culicidæ,* **4,** Sept.—**Enderlein, G.** To knowledge of fleas and sandfleas: new and little-known Pulicidæ and Sarcopsyllidæ, figs., 1 pl., **89s.—Howard, L. O.** Diptera collected in Hawaii by H. W. Henshaw, **102.—Kellogg, V. L.** Studies for students, ii: the histoblasts (imaginal buds) of the wings and legs of the giant crane-fly (*Holorusia rubiginosa*), **5,** Sept.—**Kertesz, C.** Catalogue of the Pipunculidæ described to the end of 1900, **49.—de Meijere, J. C. H.** On a new Cecidomyid with a peculiar larva, 1 pl., **46.—Pergande, T.** and **[Coquillett, D. W.]** The ant-decapitating fly,* figs., **102.**

LEPIDOPTERA.—Cappel, H. A. de V. T. N. On the spines on the first tibiæ of some N. American species of *Agrotis* [in Dutch], **46.—Chapman, T. A.** The development of the imago in the pupa of *Lachneis lanestris* (also **Tutt, J. W.** Same subject, l. c.), Entomologist's Record, London, July 25, '01.—**Dodge, G. M.** and **E. A.** Notes on the early stages of Catocalæ, **4,** August.—**Dognin, P.** New South American Lepidoptera, **55.—Dyar, H. G.** Life histories of North American Geometridæ, xxiv, xxv, **5,** Aug., Sept.; On the fluctuations of the post-spiracular tubercle in Noctuid larvæ; Larva of *Megalopyge krugii* Dew.; A new species of *Bertholdia;* A division of the genus *Sphingicampa* Walsh, with remarks on the larvæ; A remarkable sphinx larva (*Lophostethus dumolinii* Latr.); Larva of *Eucheira socialis* Westw.; On the distinction of species in the Cochlidian genus *Sibine*, figs.; A

parallel evolution in a certain larval character between the Syntomidæ and the Pericopidæ; Life history of *Callidapteryx dryopterata* Grt.; Notes on the winter Lepidoptera of Lake Worth, Florida;* On the specific differences between *Alypia octomaculata* Fab. and *A. langtonii* Coup., **102.—Good, A. I.** Some observations on the development of *Feniseca tarquinius*, **4,** Aug.—**Grote, A. R.** On types of *Acronycta*, etc., **4,** Sept.; List of North American *Apatela*, **102.—Guenther, K.** Nerve terminations on the wings of butterflies, **89a.—Hampson, G. F.** A classification of a new family of the Lepidoptera, figs., **36.—Hanham, A. W.** A list of Manitoba moths, v, **4,** Aug.—**Kaye, W. J.** A preliminary catalogue of the Lepidoptera Heterocera of Trinidad, 2 pls., **36.—Moore, F.** Lepidoptera Indica, pt. I. London, L. Reeve & Co., '01. Rec'd. July 12. [pp. 25-48, vol. v, Acræinæ, Calinaginæ, pls. 385-390].—**Poljanec, L.** Morphology of the external sexual organs of the male Lepidoptera, figs., 3 pls, Arbeiten, Zoologischen Instituten Universität Wien, xiii, 2, Rec'd. Sept. 9.—**Schaus, W.** New species of Noctuidæ from tropical America, **11,** July, Aug.—**Scudder, S. H.** My first namesake [*Lycæna scudderii*], Ottawa Naturalist, Aug. '01.—**Smith, J. B.** *Acronycta* and types, **4,** Aug.—**Soule, C. G.** The inner cocoon of Attacine moths, **5,** Sept.—**Weeks, A. G., Jr.** Illustrations of hitherto unfigured Lepidoptera. Pp. 1-31, pls. Separate work; title-page and date not yet issued.—**Wolley Dod, F. H.** *Pyrameis cardui* [very abundant], **4,** Aug.

HYMENOPTERA.—Anglas, J. Observations on the internal metamorphoses of wasps and bees, Bulletin Scientifique de la France et de la Belgique, xxxiv, Paris, '01.—**Ashmead, W. H.** *Magrettina*, a new genus in the family Mymosidæ, **102.—du Buysson, R.** On two *Melipona* from Mexico, **32,** 1901, No. 3.—**Emery, C.** Concerning the classification of the Formicidæ, figs., **35,** 6.—**Enderlein, G.** New species of *Pepsis* from the Museum für Naturkunde in Berlin, figs., Stettiner Entomologische Zeitung, lxii, 1-6, '01.—**Forel, A.** Sketch of the habits of North American ants, translated by A. P. Morse, **5,** Aug. and Sept.; Some new ants from South Brazil, etc., **56.—Handlirsch, A.** Four new species of the Hymenopterous genus *Gorytes*, figs., **44.** **Konow, F. W.** New Chalastogastra-species, **49.—Marchand, E.** On the return of *Bembex rostrata* to the nest, Bulletin, Société des Sciences Naturelles de l'Ouest de la France, x, 4, Nantes, June 15, '01.—**Morice, F. D.** Illustrations of the sixth male ventral segment in seventeen *Osmia* species of *adunca* group, etc., 2 pls., **36.—Petrunkewitsch, A.** The polar bodies and their fate in fertilized and unfertilized bee-eggs, **89a.—Robertson, C.** Some new or little-known bees,* **4,** Aug.—**Schulz, W. A.** On the nest of *Bombus cayennensis*, **44.—Seurat, L. G.** On the morphology of the respiratory apparatus of the larva of *Bembex*, **32,** 1900, No. 7.—**Titus, E. S. G.** A new genus in the Coelixinæ;* Notes on the genus *Osmia*, fig., **4,** Sept.—**Wheeler, W. M.** The compound and mixed nests of American ants, part ii,* **3,** July, Sept; Biological notes on Mexican ants, **35,** 6.

DEPARTMENT OF ECONOMIC ENTOMOLOGY

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Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D, New Brunswick, N. J.

SAN JOSE SCALE.

One of the most interesting pamphlets on this apparently over-worked insect has come recently into my hands by the kindness of Dr. L. Reh, its author. It is entitled "Zucht-Ergebnisse mit *Aspidiotus perniciosus* Comst," and is an extract from the Jahrbuch der Hamburgischen Wissenshaftlichen Anstalten, XVII, 1899. It describes a series of observations made on scales found on American apples, and carries the young from birth to the beginning of the adult stage. The observations concerning the length of the various stages do not apply to field conditions existing here; but some of the other points seem to have escaped our own students or to have been considered immaterial.

First of all the suggestion is made that it is somewhat probable that the species is parthenogenetic. The contrary has been rather assumed than proved; but on the other hand there is no proof either that parthenogenesis really does exist. The matter is of great practical importance, because on budded nursery stock a few single scales widely scattered in a large block may occur. I have known a set of cuttings bought to obtain a new variety, to have just one scale so situated as to make it likely that it would be budded in. Assuming this to be a female requiring coition with a male to produce young, and there is no danger of infesting the nursery; assuming the contrary, and this one scale might prove the centre from which in a year or two a large area may become infested.

Larvæ were obtained from two females, both of which threw off the scale before reproduction commenced, partly covering themselves by a dense white, woolly or waxy excretion from the sides of the posterior segments. No reason is suggested for this particular proceeding; but it is noted that the same fact was observed on *Aspidiotus pyri*, *Diaspis pentagona* and *D. ostreæformis*. It would be an excellent thing were this habit usual, as it would enable us to use comparatively weak sprays effectively during the growing season. The observations made on the active larva agree with those published by Howard and Marlatt, but it is added that the larvæ have for a few days at least the power to change their location, even after the white waxy covering has become complete over the insect. He noted two instances where larvæ had set on an apple and afterwards, two or three days later, changed their position. The first of white scale is made up entirely of the waxy filaments extruded by the larva and is very easily removed from it.

If this is done the larva renews it promptly. So long as this white scale remains the larva does not moult, and larvæ only have been found under it. The black scale is formed by waxy excretions from the insects, appearing in narrow wings at the edges of the white scale, which is gradually lifted and forms a central covering which, in a short time, either shrivels and falls off, leaving a discernible torn edge, or it actually changes colors In other words, the white scale and the black scale are produced in the same way and consist entirely of wax or waxy excretions. No exuvium is ever found under such a scale and none ever forms part of it. On close examination under the microscope it is shown that the insect is really in the larval stage as yet, though the legs and other appendages have lost function. The chitinous walls of these appendages are yet present; but the contents have been completely absorbed.

Moulting is coincident with the beginning of the final scale, which is a totally new structure of which the exuviæ or cast skins form a part.

I have myself noted the fact that the insects that live through the winter and start reproduction in spring are those under the black scales or, as I described them, half-grown scales. I do not believe, and so stated, that any specimen that becomes sexually mature and begins to reproduce in fall ever resumes breeding in spring. The fact that reproduction begins so generally at one time—in New Jersey, June 10—argues that the insects that survive are all in about the same stage, which Dr. Reh's observations indicate is as the larva. This affords a reasonable explanation, not only for the late date that reproduction begins, but for the fact that within less than a week almost every surviving individual seems to be bringing forth young.

The final scale begins as a paler ring at the margin of the black scale, and the latter, for a time, forms the nipple or covering. This in time meets the fate of the white scale, is cast or rubbed off and leaves the yellowish centre.

A curious fact seems to be that whereas in American examples the complete black covering to the adult scales is exceptional, in the Japanese examples it seems to be the rule. Dr. Reh thinks that Cockerell's species *andromelas* and *albopunctatus* are based upon examples of *perniciosus* varying in the presence or absence of this second black scale. Dr. Reh also inclines to agree with European authors concerning the method of moulting, and considers Howard and Marlatt in error in describing the separation of the old larval skin into a dorsal and ventral half. He believes, on the contrary, that the skin splits transversely before the mouth parts and that the insects wriggles out through the slit so formed.

The entire paper is suggestive and well repays careful reading though, as already stated, the breeding notes should not be too literally applied to field conditions in America.

Another interesting paper by Dr. Reh is on the resistence of certain species of *Diaspinæ* to external influences, from the "Biologischen Central Blatt," December, 1900. In this he gives the results of a long series of experiments made with all sorts of liquids and gases, mainly on certain species of *Diaspis* and *Aspidiotus* including *A. perniciosus*. The results are sometimes a little unexpected and not easily explained, as when complete submergence in 90 per cent alcohol for several hours failed to kill, and when hydrocyanic acid gas left living examples after a twenty-four hours' exposure. But even painting over with chloroform and kerosene proved more or less ineffective and it would seem, theoretically, that such substances and such processes would not be of much practical use. Nevertheless we know that the gas and the kerosene really are very effective in the nursery and orchard.

The only positively fatal applications were coverings with rape oil and vaseline. These, though rather slow, were absolutely certain and are classed as methods of excluding air. The paper concludes, freely translated, as follows:

"As the most effective method, aside from the mechanical destruction of the insects, my results indicate the exclusion of air, which is most easily obtained by covering with oil or fat, and surely kills all the lice."

This is important, because it confirms experimentally what I have advised practically in the orchard. Crude petroleum leaves a thin vaseline coating which, eventually, kills everything in its way, even the tree, if it is present in excessive amount. It kills by excluding air, of course, but perhaps not quite in the way indicated by Dr. Reh. The material forms no coating over the scale—it penetrates through it and, sooner or later, comes into contact with the insect itself, closing its breathing operations in the most effective manner. But this is different from the mere exclusion of air, as where, for instance, by a resin mixture applied to the outer surface, the scale is practally sealed to the tree, none of the substance coming into contact with the insect itself. I would quite expect a long life for an insect so covered, and would not be surprised if, in the mere process of growth, the seal would not be in time broken.—JOHN B. SMITH.

Doings of Societies.

A regular stated meeting of the Feldman Collecting Social was held this evening, September 18th, at the residence of Mr. H. W. Wenzel, 1523 S. 13th Street, 11 members present. The President, Mr. Charles W. Johnson, in the chair. The Minutes of the last meeting were read and approved.

Mr. H. Wenzel exhibited a series of seven boxes containing his collection of *Lachnosterna* which he had worked up during

the summer. The local species which he had before were without data or correct localities, and he spent the summer collecting in southern New Jersey and around Philadelphia for this genus. He had about twenty species in all.

Prof. Smith said this fine series showed what systematic collecting could do. He exhibited specimens of *Epicauta callosa*, which is a species new to New Jersey, eight specimens were taken before noon August 19th, on the cranberry bogs near New Lisbon. He also exhibited specimens of the pitcher plant mosquitoes, which had been found to be a new species, and was described by Coquillett as *Aedes smithii*, and stated that he now had its complete life history. This insect has also been found in Florida in the species of orchids which grow up on the trees. The female *Aedes* lay their eggs in the newest leaves of the pitcher plants and do not always wait for water to collect in them. Of the specimens of larvæ which he had taken during the winter the last one changed to the pupa state about September 9th, thus being in a larval state since last October. He thought that there were about three broods and that the different specimens vary in their time of appearing, which seems to give one continuous season.

Mr. H. Wenzel showed some larvæ which had been taken in some dirt around the roots of trees in the "Philadelphia Neck." He thought at first that they were *Lachnosterna*, and placed them in a jar filled with dirt, and in about six weeks the larvæ changed to the imago, and instead of being *Lachnosterna* they turned out to be *Chalepus trachypygus*.

Prof. Smith spoke about the trouble which had been caused around New Brunswick by *Ligyrus relictus* attacking plants. This is the first time he has known it to be of economic importance.

Dr. Skinner stated that while collecting at Castle Rock, Pa., he took a specimen, *Griburius equestris*, on the 23d of June, and *Necydalis mellitus* on the 30th of June; both are new to this locality. A specimen of *Neonympha areolatus* was also taken at Jones' Mills, N. J., on the 21st of June, by Mr. Witmer Stone, and is a new locality for New Jersey.

Mr. Daecke showed a specimen of *Ptynx appendiculatus* taken

at Dacosta, N. J., on July 16th, and not before recorded from New Jersey. He also exhibited a number of *Mutilla* taken at Dacosta, N. J., September 2, 1901, on a tulip tree infested with *Lecanium tulipiferæ*.

Dr. Skinner mentioned that at Dacosta, N. J., on July 4th, *Cicada hieroglyphica* was seen by thousands. He stated he had spent his vacation out West, and gave the following points concerning his trip:

"The greater part of the time was spent in Sapello Canon, which runs into the main range of the Rocky Mountains from the east, about thirty miles northwest of Las Vegas, New Mexico. Collecting was done at an elevation of from 7200 to about 11,000 feet; fire was necessaary night and morning and rains were constant every day but one. A much larger amount of material would have been obtained if it had not been for the wet weather. It is too soon to say anything about the result of the trip as the material has not been studied. *Argynnis nitocris nigrocærulea* Cockerell was taken and other interesting butterflies. *Platynus nivalis* Horn and an undetermined *Cychrus* are of interest in the Coleoptera. I hope later to give a detailed account of the species taken."

The Secretary read a note from our fellow member, Mr. Frank Haimbach, tendering his resignation as a member of the Social. The same was accepted.

The Secretary invited the members of the Social to hold the October meeting at his residence, 2245 N. Lambert Street, which was accepted.

After the reading of the rough minutes the meeting adjourned to the annex at 11 o'clock. W. R. REINICK, *Secretary*.

The eighteenth regular meeting of the Harris Club was held at 35 Court Street, Boston, on the evening of June 14, 1901.

Messrs. Hall, Newcomb and Osgood showed some ingenious forms of collecting boxes. Several members discussed devices for trapping insects. Mr. Newcomb told of the capture of *Hemaris thysbe* at electric light. Mr. Morse showed an inter-

esting collection of New England Orthoptera. Mr. Field exhibited a series of speciments of *Lycaena xerxes*.

The exchange of specimens was made a prominent feature of the meeting.

W. L. W. FIELD, *Secretary*.

A regular stated meeting of the Newark Entomological Society was held on Sunday, Sept. 8, at Turn Hall, 11 members being present. President Buchholz in the Chair. Mr. Seib exhibited larvæ of *Phobetron pithecium*. Mr. Luccareni exhibited a set of *Sphæridium scarabæoides* taken near Split Rock Pond, Morris County and herefore not listed from New Jersey.

All members present at the field meeting at Paterson reported excellent captures, amongst which were *Cremastochilus canaliculatus*, 20 taken, and *Byrrhus americanus*.

GEORGE LUCCARENI, *Secretary*.

OBITUARY.

Louis Schneider, one of the best known of local entomologists and botanists, died recently at his residence, 1615 Girard avenue. His death was due to angina pectoris, and was wholly unexpected, as he had gone to his place of business in the morning apparently well. He came home feeling ill, and died in a few hours.

Mr. Schneider was born Feb. 16, 1836, at Hungen, Hesse-Darmstadt, where his father was Burgomaster. The young man came to this country in 1853, and for more than forty years was in business. He was a manufacturer of canes, and of umbrella, whip and cane handles, billiard balls, etc., at 234 Ionic Street, and was known in his line all over the country. He was a member of the Academy of Natural Sciences, of the Philadelphia Botanical Club and an organization member of the American Entomological Society. At all seasons of the year Mr. Schneider made pilgrimages into the country, and he was one of the best informed men in the city as to localities in which entomological or botanical specimens of particular kinds could be found.